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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

Japan's Interest in Alberta's Tar Sands

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
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INTELLIGENCE MEMORANDUM

JAPAN'S INTEREST IN ALBERTA'S TAR SANDS

Introduction

1. Already the world's largest oil importer and facing a tripling of requirements by 1980, Japan has been searching worldwide to meet its long-term needs. Tokyo is showing a new interest in Alberta's tar sands. These sands bear enormous amounts of oil, but their exploitation has remained unattractive because of extremely high extraction costs. This situation may change during the 1970s, given the recent large price increases for oil imported from members of the Organization of Petroleum Exporting Countries (OPEC) and the likelihood of substantial further rises. This memorandum examines tar sand developments to date, signs of Japanese interest, and the reasons why Japan may want to invest in the industry.

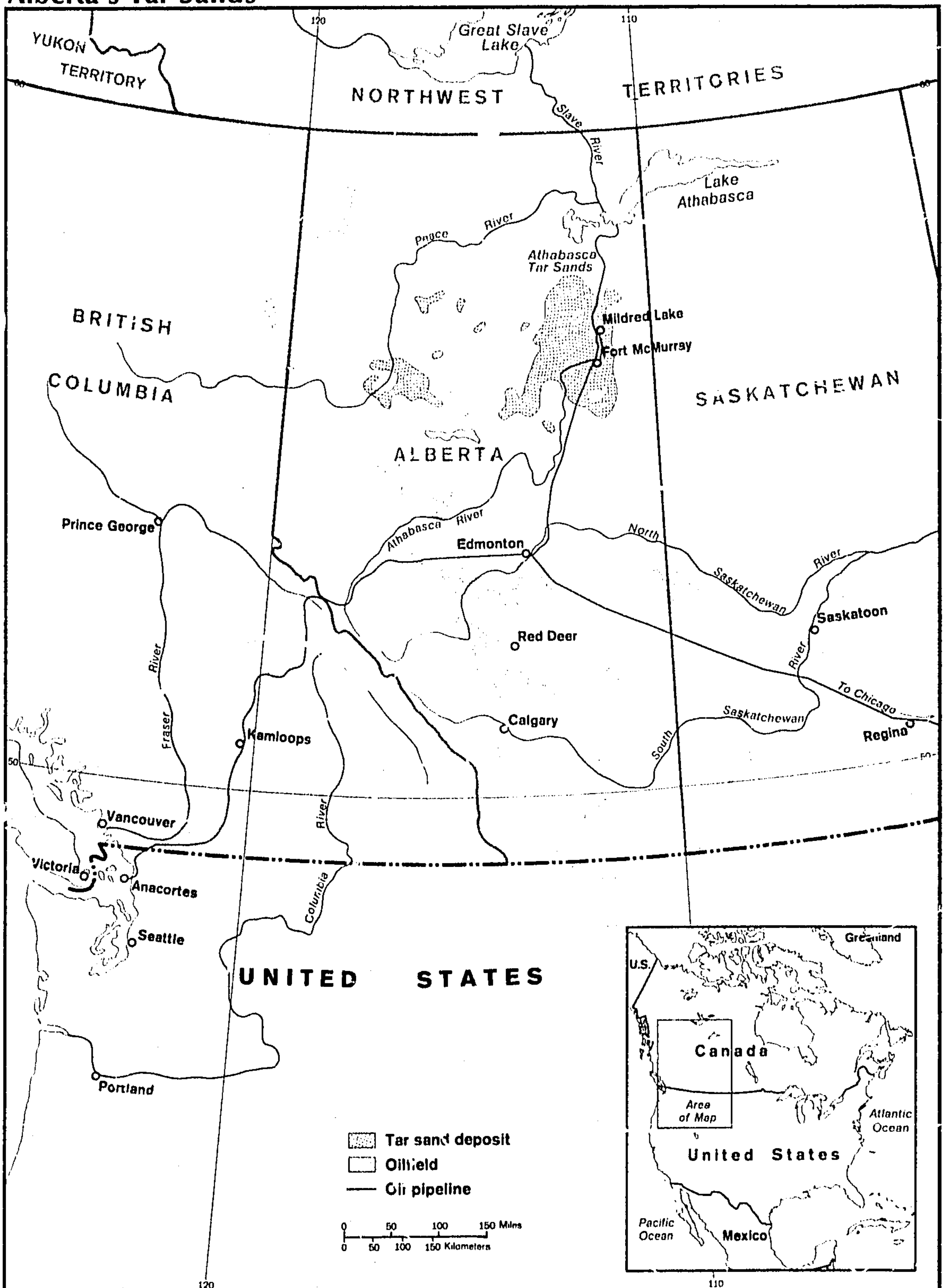
Discussion

The Tar Sands' Potential

2. Alberta's tar sands have long been regarded as a huge oil resource that would eventually become economic to exploit. The recoverable oil in these sands along the Athabasca River (see the map) is estimated at more than 300 billion barrels – about as much as the Middle East's proved reserves and equal to about one-half of the world's conventional crude oil reserves. The sands rank with the US shale deposits as the world's most extensive known, largely untapped oil source.

Note: This memorandum was prepared by the Office of Economic Research and coordinated within the Directorate of Intelligence.

Alberta's Tar Sands



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3. So far, exploitation has been small because of high extraction costs and Alberta's interest in promoting conventional crude oil production. But conditions obviously are changing. Prices of Middle East crude oil are rising rapidly, and, with no major oil discoveries in Alberta since the mid-1960s, Edmonton is beginning to worry about maintaining oil production.

4. Production costs are high because of the complex process required to extract oil from the sands. The sands are strip mined, brought to a nearby processing plant, and mixed with steam and hot water in a rotating drum similar to a cement mixer. The sand and oil slurry flows into a water-filled separation cell, where the oil, a viscous bitumen, floats to the top and is skimmed off. Through several other processing stages, the bitumen is condensed into naphtha, kerosene, and a gas oil mixture. The three streams are then treated with hydrogen to remove their sulfur content and finally blended into a synthetic crude oil. Where the sands are too deep for strip mining, steam is injected into the sands, producing a mixture of oil and water that can be recovered by conventional drilling. This avoids the costly task of moving the sand to the processing plant and hauling away the substantial residue.

5. Despite the costly extraction process, two firms have already made substantial investments in production facilities. In 1964, Great Canadian Oil Sands Ltd. (GCOS), a newly formed subsidiary of the Sun Oil Company, began exploiting the Athabasca River sands about 20 miles from Fort McMurray. GCOS began limited production in 1967 after investing more than $300 million in plant and equipment, and output has now reached about 50,000 barrels per day (b/d). Both the investment costs per barrel of capacity and the operating costs of the GCOS plant have been very high. As a result, the firm has suffered heavy losses during its first years of operation. By mid-1972, however, GCOS reached the break-even point and might well show an operating profit in 1973.

6. GCOS's experience did not deter Syncrude – a consortium of Canadian affiliates of several US oil companies – from undertaking its own $300 million effort in 1969. Plans call for producing 125,000 b/d in 1976. While Syncrude's processing methods will be similar to those of GCOS, it hopes to make sufficient technological improvements to compete with conventional US and Canadian crude oils.

Signs of Japanese Interest

7. Although no investment agreements or supply contracts have yet been signed, Japan has been interested in the tar sands for several years. In 1967, Japan Petroleum Exploration Co. Ltd. (JAPEX), a quasi-government firm, reportedly was considering building a $300 million

extraction and processing plant in the sands area. JAPEX was unable, however, to obtain mineral leases from Edmonton. Moreover, plans for joint ventures with several companies, including Tenneco of the United States, fell through, leaving Japanese companies without the needed technology. The firm also had second thoughts about the project because oil from the tar sands did not suit Japanese refineries, which processed mostly Persian Gulf crude oils.

8. Japanese interest in Alberta's resources faded after this deal failed to materialize, and the continuing intensive search for oil supplies focused on the Persian Gulf, the Far East, Alaska, Africa, and Latin America. Renewed interest in Canada's tar sands arose in 1970 and 1971, when JAPEX was said to be considering a $1 billion investment, including a pipeline to the Pacific Coast. Discussions concerning the project, however, were halted.

9. The Japanese showed interest again in July 1972, when representatives of several Japanese financial institutions traveled to Alberta to discuss a tar sands project with local officials. While no agreements were signed and little information about the discussions was released, Alberta officials journeyed to Toyko in September for a meeting with Japanese oil officials. From what little information is available, it appears that JAPEX has abandoned the idea of building a pipeline to the Pacific Coast in favor of exchanging tar sand oil for US West Coast and Alaskan crude oil. Tar sand oil probably could be shipped to the United States through an existing pipeline to Edmonton and then through the interprovincial oil pipeline. The capacity of the former pipeline, however, would have to be increased. Estimates of the potential Japanese investment in Athabasca sands now range between $500 million and $1.5 billion, with projected production of perhaps 250,000 b/d. 25X1

10. The seriousness of the discussions between Japanese and Canadian representatives is difficult to assess. Each side has been extremely reluctant to talk about the matter. [redacted] It is known, however, that Japan's Ministry of International Trade and Industry (MITI) plans to complete a feasibility study of the tar sands project by the year's end, and Edmonton has indicated it will issue a policy statement at about the same time.

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Canadian Attitudes

11. Whatever the immediate outcome of the recent discussions, continuing efforts to exploit the tar sands are likely and there seems to be a basis for a Japanese-Canadian deal. Edmonton's attitude toward tar sands development is changing – and for good reason. Until the mid-1960s,

companies were frequently finding new crude oil deposits. Since then, however, there have been no new discoveries, and the present production rate of about 1 million b/d is expected to be sustainable for only about 15 years. To make tar sands projects more attractive, Alberta has cut GCOS's royalty obligations by 50% for three years and apparently shelved plans for new taxes on such operations. The fact that Alberta's Prime Minister led the delegation that went to Tokyo underscores Edmonton's serious intent.

12. Ottawa's attitude toward the tar sands remains unclear. The national government probably attaches much more importance to the newly discovered natural gas fields and to the hoped for crude oil in the Arctic and off the East Coast. Moreover, it no longer seems to be concerned about keeping the tar sands as an oil reserve, as was once the case. Because the Canadian political system allows provincial governments considerable independence from the central government, Edmonton may move ahead with tar sands deals even if Ottawa is unenthusiastic. The pollution issue and opposition to defacing Alberta's landscape may arise but has not as yet.

Motives for Japan's Interest

13. Tokyo has several reasons to be interested in the tar sands – its critical dependence on a large and rapidly growing oil inflow, concern about being overly dependent on oil from politically unstable areas, and recent and prospective price increases for oil from OPEC members.

14. Clearly the most recent factor that has prompted a complete reversal of Tokyo's policies toward overseas mineral investments is the country's extremely strong balance of payments position. Until 1969, because of meager foreign reserves, Tokyo limited investments abroad, allowing other countries to finance and profit from the development of minerals bought by Japan. However, during 1969-70, as reserves grew by $2 billion, Tokyo gradually allowed greater direct investments abroad. In 1971, when reserves jumped by $10 billion, Tokyo actively pursued policies aimed at obtaining stable sources of minerals overseas, with more direct control over production of these resources. This year, Tokyo has been energetically seeking ways of spending overseas, fearing that its still growing reserves will lead to another yen revaluation. One such scheme, implemented in October of this year, makes available to Japanese firms $1.5 billion in loan funds, mainly to obtain essential minerals and acquire mining rights to provide for future needs. Tokyo hopes these funds will be fully allocated before April 1973, thus giving the search for new oil and mineral resources a new sense of urgency.

15. More dependent on foreign crude oil than any other major industrial country, Japan faces the prospect of having to boost imports from the present 4.2 million b/d to 11 million b/d by 1980. In trying to obtain such quantities, Japan will increasingly be competing with the United States and Western Europe, whose imports also will rise greatly. Moreover, since Japan is a late starter in looking for and exploiting foreign oil resources, it is having to devote some of its energies to what are for now at least considered marginal sources.

16. Tokyo has been attempting for some time to reduce its dependence on Persian Gulf crude oil. It is constantly concerned that political upheavals in the Middle East may affect supplies and that troubles in Southeast Asia might one day close the Straits of Malacca, through which almost all Persian Gulf crude oil transported to Japan now passes. Canada's much more stable political situation and the uncomplicated route across the North Pacific help to make the tar sands attractive.

17. Tar sand oil is not now competitive with conventional sources of crude oil, but prospects for rising world oil prices and a growing oil supply deficiency in the Western Hemisphere bode well for its future competitiveness. By the late 1970s – when any investments in Athabasca begun soon by the Japanese would come to fruition – the US price of crude oil is likely to be in the range of $4 to $5 per barrel. At that price level, tar sand oil would certainly be competitive, especially in the seriously oil-deficient US Midwest. GCOS production costs are currently about $3.40 per barrel and are unlikely to increase as fast as prices for conventional oil, because savings in future operations derived from economies of scale and technological advances probably will at least partly offset normal inflationary trends. Moreover, Alberta will likely offer generous tax incentives. Developing the sands thus holds promise not only of diversifying Japanese oil sources but also of eventually providing a lever for price bargaining with OPEC suppliers.

18. Up until now, little work has been done on improving the tar sands technology, primarily because the production cost gap has been too wide to bridge by technology alone. With the narrowing of this gap, however, interest in developing a more efficient operation may strengthen. Aside from improving processing plant operations, research probably will be directed at recovering the more abundant deeper sands that can be reached now only by conventional drilling. Several oil companies have considered using nuclear blasts underground to liquefy the sands and then sinking wells to bring the oil out, but this technique has been shunned by government officials because of the public resistance to nuclear explosion.

19. Although the Japanese say they are willing to invest a considerable sum in minerals development abroad, they would have trouble undertaking a tar sands venture themselves. Japan's technical ability to undertake oil ventures is growing rapidly but is still far behind that of the United States. Moreover, special tar sands expertise is held by only a few US companies. Thus, as with many of its recent overseas oil operations, Japanese firms would probably find it necessary to go into partnership with leading international firms. Partnership arrangements would have further appeal because of the overland transportation problem. Japanese firms now realize that it would be most economical to swap the tar sands oil for crude oil shipped from the US West Coast or, perhaps in later years, for Alaskan North Slope crude oil. Everything considered, it seems likely that Japanese firms will invest in developing Alberta's tar sands during the next few years but that the project probably will be a joint venture.

Conclusions

20. We cannot state with certainty that a Japanese-Canadian deal to exploit part of the vast Athabasca tar sands will be concluded in the coming months, although the circumstantial evidence points that way. Recent changes on the international oil scene that have sharply increased the world price of oil, and promised further substantial increases have made the tar sands increasingly attractive economically. Two US-dominated consortia have already spent several hundred million dollars developing the sands; thus reports that the Japanese are thinking in terms of up to a $1.5 billion outlay seem quite reasonable.

21. From Tokyo's point of view the tar sands scheme would have several advantages. It would give Japan some control over a substantial petroleum resource and assure some oil imports in the event of an interruption of supplies from the volatile Middle East, where almost all of Japan's imports now originate. While Japan has long been interested in seeking overseas oil concessions, it felt unable to spend the vast sums necessary to reach assured production. Now, however, Tokyo suffers from an embarrassment of riches, since an extremely favorable balance of payments has generated enormous foreign reserves. The country has already earmarked $1.5 billion to be loaned to local firms by April 1973 mainly to accelerate their search for oil and mineral resources around the world.

22. For Alberta's part, the government's vacillating attitude toward exploiting the tar sands has now settled in favor of it because there have been no significant recent oil finds and declining oil production is in prospect. [redacted]

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